IDAHO
DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

Niagara Springs Hatchery

Annual Report

October 1, 1979 - September 30, 1980

by

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Niagara Springs Hatchery

ABSTRACT

A total of 1,650,840 steelhead weighing approximately 309,000 pounds were released into Pahsimeroi River and Snake River below Hells Canyon Dam.

A total of 620,520 pounds of fish feed was fed to produce 319,645 pounds of fish, for a conversion rate of 1.94:1.

There are 1,481,958 steelhead fingerlings weighing 37,142 pounds on hand at the end of September 1980.

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OBJECTIVES

The objectives of Niagara Springs Hatchery are to:

1. Raise 200,000 pounds of steelhead smolt to be released into Pahsimeroi River.

2. Raise 50,000 pounds of steelhead smolt to be released into Snake River below Hells Canyon Dam.

The purpose of this project is to continue the program of relocation of Snake River steelhead to Pahsimeroi River and maintain the steelhead run in the lower Snake River.

INTRODUCTION

Niagara Springs Hatchery is owned and financed 100% by Idaho Power Company. The hatchery is located 10 miles south of Wendell, Idaho **in** Snake River Canyon at Niagara Springs.

It receives its water supply from Niagara Springs, and requires 110 cfs of water to operate.

The hatchery includes one building 90 feet x 30 feet that houses an office, two incubator rooms, storage rooms, shop and three restrooms. One building 12 feet x 36 feet used for storage and one building 20 feet x 20 feet that houses a 20 ton freezing unit used to chill the water for hauling steelhead. There are 14 raceways 10 feet x 3 feet 10 inches x 300 feet, for rearing steelhead. There are 3, three bedroom houses for housing the employees, and three trailer pads.

All water used at the hatchery for rearing steelhead, domestic use and the irrigation of approximately 10 acres of lawn is supplied by gravity flow from Niagara Springs.

FISH PRODUCTION

There were approximately 1,973,621 steelhead fingerlings weighing approximately 47,787 pounds on hand 1 October 1979. There was a loss of 322,781 steelhead from 1 October through 1 May 1980.

Received from the Pahsimeroi Station were 1,697,010 eyed steelhead eggs, and 498,416 eyed steelhead eggs were received from the Oxbow Station. These eggs were received during the months of April, May and the first of June.

The eggs from Oxbow ranged in size from 264 to 318 eggs per ounce. The eggs from Pahsimeroi were mostly 238 per ounce, with only two lots of eggs at 250 per ounce.

These eggs were placed in hatching boxes where they remained until they hatched and became free swimmers. They then swam out of the boxes into circular tanks. The fry were kept in the tanks until they were feeding well. They were then piped out into the short raceways outside.

As they grew, they were moved into the large raceways, and the raceways were lengthened as the fish grew, until they utilized all raceway space.

There was a total loss, including hatching loss, on the steelhead eggs of approximately 265,791, this represents a loss of 12%.

All these fish were started on OMP (Oregon Moist Pellets), and after a week or so of feeding they were gradually switched to number 2 fry feed.

There are 1,481,958 steelhead fingerlings weighing approximately 37,142 pounds at the end of September 1980.

FISH HEALTH

Of the fish on hand 1 October 1979, a total of 83% were released in March and April 1980. There was no disease encountered on this lot of steelhead during this time. The 17% loss was mainly hidden losses caused by cannibalism, predation by birds and animals, and underestimating the hatching losses.

The only treatments that were used on these fish was prophylactic treatments of Purina 4X to hold down any bacteria that might be present and especially myxobacteria. This treatment was administered by using a large syringe and squirting approximately one ounce of Purina 4X into the upper end of the raceways, just below the headrace boards and above the upper screens, every one to two minutes until 16 ounces has been put into the raceways. This takes approximately one half hour to treat each raceway.

The fish from the eggs that were received in April, May and June 1980 became infected with IPN (infectious pancreatic necrosis) during the month of June, but the disease was not diagnosed and confirmed until July. Treatment during June consisted of adding Sulfa and TM-50 to the feed, and a flush treatment of Purina 4X. Neither treatment showed any signs of helping the steelhead. The treatment using Purina 4X and Cutrine was continued through July and August in an effort to keep down secondary disease.

A loss of 447,677 steelhead was calculated through 30 September 1980. This was a loss of 23%.

The mortality had dropped to almost nothing by the first of September 1980.

FISH RELEASES

Fish hauling started 2 October 1979 and continued through 11 February 1980 to Snake River below Hells Canyon Dam. A total of 553,780 steelhead fingerlings weighing approximately 48,700 pounds were hauled to and released into the Snake River.

The fish hauling to Pahsimeroi River started 17 March 1980 and continued through 2 May 1980. A total of 1,097,060 smolt or near smolt size steelhead weighing approximately 260,300 pounds were hauled to and released into Pahsimeroi River at the Idaho Power Company's steelhead trap.

The State of Idaho Department of Fish and Game trucks and trailers hauled, at Idaho Power Company expense, all of the steelhead to Hells Canyon and 406,260 steelhead weighing 89,100 pounds to Pahsimeroi River. Idaho Power's tanker hauled the remainder of the steelhead.

No major problems were encountered during the hauling this season.

FISH FEED UTILIZED

A total of 620,520 pounds of fish feed was fed to produce a total of 319,645 pounds of fish. This is a conversion of 1.94:1. The cost of the fish feed was $120,280.13, including sales tax of $1,909.76. The cost of fish food used to produce a pound of fish is $0.376.

The following is a breakdown on the fish feed used during the fish year 1979-1980:

FISH FEED SIZE	COST PER LB.	POUNDS USED	COST
no. 2 fry feed	.2469	200	$ 49.38
	.2543	2,850	724.76
no.3 fry feed	.2543	3,200	813.76
	.2579	5,000	1,289.50
sulfa	.4247	500	212.35
no. 4	.1948	350	68.18
	.1891	17,650	3,337.62
TM-50	.3724	100	37.24
no. 5 fine crumble	.1929	21,060	4,062.47
	.1891	29,220	5,525.50
no. 6 coarse crumble	.1979	209,910	41,541.19
no. 7 4/32 pellets	.1785	261,520	46,681.32
no. 8 5/32 pellets	.1786	58,360	10,423.10
Total Dry Feed		609,920	$114,766.37
Total Sales Tax			$ 1,909.76
Total Dry Feed and Sales Tax			$116,676.13

FISH FEED SIZE	COST PER LB.	POUNDS USED	COST
OMP			
16 mesh	.3400	600	$ 204.00
1/8 pellets	.3400	10,000	3,400.00
Total OMP		10,600	$3,604.00
Total All Feed		620,520	$120,280.13

SPECIAL STUDIES

The tagging crew tagged two lots of steelhead the week of 9 October 1979. The first lot consisted of 52,576 steelhead and the second lot consisted of 52,476 steelhead. The first lot of steelhead were fed OMP (Oregon Moist Pellets) for a period of 30 days prior to being released into Pahsimeroi River at the steelhead trap. The second lot of steelhead were used as a control, and were released at the same time and place as the first lot.

The purpose of this study is to find out if the steelhead fed OMP prior to release will return in greater numbers than those fed the standard dry diet.

MISCELLANEOUS ACTIVITIES

During the year we had a large number of visitors and fishermen here at this station. The State Park personnel counted in excess of 71,000 people using the park area, and a large percent of those also visited the hatchery.

Most of the schools **in** the Wendell, Gooding, Jerome, Twin Falls and surrounding areas bring several classes of students here each year for a tour of the hatchery and a talk about the hatchery and related subjects.

Classes from the University of Utah, Idaho State University, University of Idaho, Colorado State University and College of Southern Idaho come in at least once every year, and as much as an hour and a half is spent talking to these classes.

Don Nelson of Sterling Nelson and Sons Feed Company from Murray, Utah; Rangen Feed Company and the Federal Hatchery bring groups of people from all over the world to this hatchery for tours and talks about this hatchery and fish raising in general.

Idaho Power Company crew spent many hours here during the year on general maintenance and repair work. Our thanks to Bob Butler and his crew for the quality of their work and the quickness in which they respond when we have need of them. It has been a pleasure working with them.

HATCHERY NEEDS

There is a need to have a crowd rack that can be moved by the bridge. This would prevent the killing of a large number of steelhead when being crowded. The raceways are so uneven that a hand push crowd rack cannot be held steady and fish are caught under the rack and crushed. A bridge crowder made with flexible rubber wipers on the sides and bottom would prevent this loss.

A concrete spillway is needed at the main water intake dam, so the water can be better controlled. With the dam as it is now, when we shut down to clean the raceways and headrace, the Idaho Power Company crew has to bring the backhoe over and dig a ditch through the dam, then when we need more water they again have to bring the backhoe and dump truck and fill in the dam. A concrete spillway would soon pay for itself as well as being easier to control the flow of water.

A change is needed in the system for running the cleaning effluent into the settling pond. The pipes that carry the water from the raceways to the settling pond are not large enough to carry the water from even one raceway, so consequently, a large amound of the cleaning goes out into Niagara Springs Creek. Some system is needed so that more than one raceway can be cleaned at one time without all the water and cleanings going into the creek.

ACKNOWLEDGEMENTS

Hatchery staffing during the fish year included Charles R. Quidor, Fish Hatchery Superintendent III; Jerry Mowery, Fish Hatchery Superintendent I, worked through August 1980; David May, Fish Culturist; Paul Smith, Fish Culturist, first 10 days of October 1979; David Parrish, Fish Culturist, started 10 November 1979 and Jalyn Black laborer for 27 days.